2004-526591/51 A96 D21 (A11 A14 A25) **BADI 2002.12.20**
BASF AG *DE 10261197-A1
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High solids, low viscosity aqueous dispersions especially for use in cosmetics contain a polymer of an N-vinyl monomer, together with polymeric dispersing and precipitation agents and a crosslinker
C2004-193743

Addnl. Data: CHRISSTOFFELS L, HOESSEL P, LEDUC M, WOOD C, ANGEL M, MATHAUER K

A(12-V4) D(8-B)

NOVELTY

Aqueous dispersions are new when produced from the following ingredients with the wt. ratio (B) : (C) being 1 : 0.02-50 :
(a) an N- vinyl monomer;
(b) a polymeric dispersant;
(c) a polymeric precipitation agent;
(d) a crosslinker; and optionally also
(e) further monomers;
(f) a regulator; and/or
(g) a buffer.

DETAILED DESCRIPTION

INDEPENDENT CLAIMS are also included for (i) production of the dispersions; and (ii) aqueous solutions obtained by dilution of the dispersions with water.

USE

As a thickener or conditioner or in increasing the viscosity of a preparation by adding the aqueous dispersion and (especially >2 wt.%) water and in cosmetics (claimed).

ADVANTAGE

The dispersions are especially suited to use as conditioners in hair cosmetics such as shampoos, having a high solids content and low viscosity and giving good properties such as combability.

EXAMPLE

An aqueous dispersion of solids content 39.9 wt.% and viscosity 650 mPas was obtained by (i) adding N-vinylformamide (180 g), N-vinyl-2- methylimidazolium methyl sulfate (44.4g; 45% aqueous solution) and triallylamine (0.6 g) to a homogeneous solution of water

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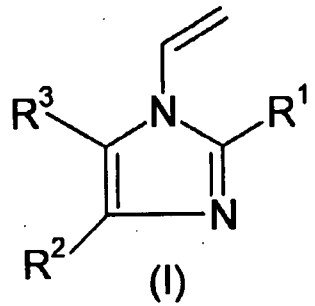
(575.7 g), sodium dihydrogenphosphate dihydrate (2 g), polyvinyl pyrrolidone (6 g; K value 90), polyvinyl pyrrolidone (10 g; K value 17), and polyethyleneglycol (180 g; molecular weight 1500) and setting the pH to 6.75 with 25% caustic soda; (ii) adding Wako V50 (RTM : 2,2'- azobis-2-(aminopropane)dihydrochloride) (1 g) and polymerizing for 4 hours at 55°C; and (iv) adding further Wako V50 (RTM) (0.24 g) and polymerizing for 2 hours at 65°C.

TECHNOLOGY FOCUS

Polymers - Claimed Preparation : Involves reacting (A) - (D) and optionally also (E) and (G) in presence of regulator (F) with the (B) : (C) ratio being 1 : 0.02-50. Preferred Composition : The wt. ratio (B) : (C) is 1 : 0.05-20 and the weight ratio ((B) + (C) : other monomers is 10 : 1-1 : 0.1. The obtained dispersion is optionally hydrolyzed, especially to an amine content in the polymer of below 20 mol.% based on monomer (A). Preferred Materials : Monomer (A) is an N-vinylamide or N-vinyllactam, while dispersant (B) is polyvinyl acetate, polyalkylene (especially polyethylene) glycol, polyvinyl alcohol, polyvinyl pyridine, polyethylene imine, polyvinyl imidazole, polyvinyl succinimide and polydiallyldimethylammonium chloride, polyvinyl pyrrolidone (PVP), polymers containing ≥5 wt.% vinyl pyrrolidone (VP) units, polymers containing ≥50 wt.% vinyl alcohol units, optionally chemically-modified oligo- or poly-saccharides (especially carboxymethylcellulose), oxidatively-, hydrolytically- or enzymatically-degraded polysaccharides, water-soluble starch or derivatives, starch esters, starch xanthogenates, starch acetates and/or dextran, especially PVP and/or polymers containing ≥5 wt.% VP units. Precipitation agent (C) is a water-soluble polyether-containing compound, especially of formula (I) and, in particular, polyethyleneglycol of molecular weight 300-100000, especially 1000-10000.



(I)

R^1 = H, 1-24C alkyl, R^6-CO-, R^6-NHCO- or polyalcohol residue;

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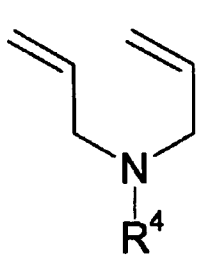
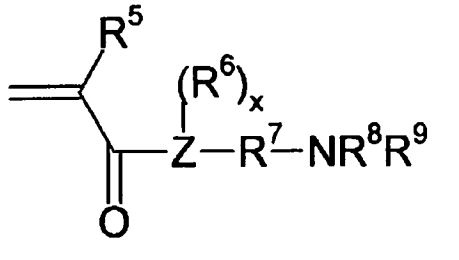
R^2- R^4 = -(CH_2)-2-4, -$CH_2CH(R^6)$- or -CH_2-$CHOR^7$-CH_2-;
R^5 and R^7 = as for R^1 but excluding polyalcohol residues;
R^6 = 1-24C alkyl;
A = -COO-, - CO-B-COO-, -$CH_2CH(OH)$-B-$CH(OH)$-CH_2-O-, -CONH-B-NH-COO- or - $C(R^{30})(R^{31})$-O-;
B = -$(CH_2)_t$- or arylene, optionally substituted;
R^{30} and R^{31} = H, 1-24C alkyl or hydroxyalkyl, benzyl or phenyl;
n = 1 when R^1 is not polyalcohol and 1-1000 when R^1 is polyalcohol;
s = 0-1000;
t = 1-12;
u = 1- 5000; and v, w, x and y = 0-5000
Further monomers (E) are cationic or quaternerizable monomers, especially N- substituted diallylamine of formula (II) or N-vinylimidazole derivatives of formula (III)



(II)



(III)

R^1 - R^3 = H, 1-4C alkyl or phenyl; and
R^4 = 1-24C alkyl
Regulator (F) is multifunctional.
(64pp1958DwgNo.0/0)

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